



EFFECT OF SELECTED YOGA ASANA ON QUALITY OF LIFE OF CLBP PATIENTS

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Abstract:

The purpose of the study was to investigate the “effect of selected yoga asana on quality of life of chronic low back pain patients. Method: The study was conducted on chronic low back patients of Haridwar district of Uttarakhand, India and age ranging from 25 to 40 years. Total thirty male/female chronic low back pain patients selected as subject (N=30). These subjects were selected in terms of purposive sample from Haridwar district of Uttarakhand. Pre-test post-test single group design was used for the study. Six weeks yogic training was employed including [Balasana](#), [Marjariasana](#), [Bhujangasna](#), [Dhanurasana](#), [Ushtrasana](#), [Vajarasana](#), [Paschimottanasana](#), [Shavasana](#) and [Pawanamuktasana](#). The data was collected by administration of the Roland-Morris Disability Questionnaire for finding out the quality of life. It was hypothesized that six week of yoga training would significantly affect the quality of life of chronic low back pain patients. The data collected on quality of life was analyzed by dependent “t” test. The level of significance for testing the hypothesis was set at 0.05. Findings: The mean values and standard deviation of pre-test and post-test of quality of life of subjects were 21.40, 1.83 and 4.03, 2.67 respectively. Significant yogic training effect was found for the quality of life of CLBP. ($t_{cal}=27.98 > t_{tab}=2.04$). The result showed that Yogic training significantly affect the quality of life of chronic low back pain patients.

Keywords: yogic training, chronic low back pain (CLBP), quality of life, dependent t test

1. Introduction

In recent years, quality of life (QOL) has become a key concept in the medical community where health care places dual emphasis on treatment and quality of care.

The World Health Organization (WHO) defines QOL as an 'individual's perception of his/her position in life in the context of culture and value system in which they live and in relation to their goals, expectations, standards and concerns' (The WHOQOL group, 1996).

Chronic low back pain (CLBP) is one of the most prominent causes of functional disability worldwide. A systematic review observed 18.3 percent (± 12.7) of survey takers having a current diagnosis of CLBP (11). In the India, 90 percent of reported cases are deemed unspecific, due to unknown pathologies.

In ancient times yoga was considered as a medium to connect the body with the mind, as described in Upanishads and Patanjali yoga sutra. Today we know that any disharmony between body and mind has the potential to cause an adverse health effect. This imbalance can lead to multiple symptoms, which either takes a form of syndromal diagnosis of a disease or group of symptoms that have no definite aetiological basis according to modern science. The curiosity is about learning to make a balance between mind and body so as to prevent rather than curing these illnesses (Telles, Kozasa, Bernard, & Cohen, 2013).

2. Chronic Low Back Pain

Pain classically has been considered as a physical symptom of an illness. In surgery, pain is considered as a window to underlying pathology; in medicine, it has special significance along with associated symptoms; in psychiatry, pain is considered as repressed emotions that give way to psychological conflict resolution. Hence, symptoms of pain disorders like Fibromyalgia, Chronic headache, and Low back pain may represent the expression of personal sufferings. Pain symptoms can also be present in depression and anxiety disorders (Haldavnekar, Tekur, Nagarathna, & Nagendra, 2014)

Chronic back pain is defined as pain that persists for 12 weeks or longer, even after an initial injury or underlying cause of acute low back pain has been treated. About 20 percent of people affected by acute low back pain develop chronic low back pain with persistent symptoms at one year. In some cases, treatment successfully relieves chronic low back pain, but in other cases, pain persists despite medical and surgical treatment.

Chronic low back pain is described as pain in the lumbosacral portion of the back (disks L1-S5) lasting more than 3-months. There is a wide range of pathologies for CLBP including disc compression, degenerative changes of the lumbar spine and muscular imbalance. CLBP can be a symptom of some serious pathology including fractures, cancer, and various musculoskeletal disorders. Interestingly, 90 percent of CLBP cases

are deemed non-specific (Williams, K, et. al 2003). There are several known risk factors for the development of CLBP. This first risk factor is age, recent reports found individuals between the ages of 30 and 60 years old have an increased risk of CLBP (Hoy, D, et.al 2010 and Rozenberg, S, et.al 2012). Secondly, CLBP is more common in females than males. Other risk factors of CLBP include history of high-energy trauma, neoplasia, musculoskeletal disorders and declines in general health. Psychological and psychosocial stress, as well as inactivity and obesity have been cited as risk factors for CLBP (Rozenberg, S, et.al 2012). Individuals whose career involves manual labor are at an increased risk as well. In a recent study, individuals involved in manual handling, bending, twisting and whole body vibration on a daily bases have an increased risk for CLBP (Hoy, D, et.al 2010). This concurs with a study by Rozenberg and colleagues (2012), who have shown individuals working in manual labor based jobs, are at a higher risk for CLBP compared to those with sedentary jobs. Thirty-nine percent of the males involved whose careers involved manual labor experienced CLBP, whereas only 18.3% of the males with sedentary desk jobs experienced CLBP. This study's results also are in agreement with the fact that individuals of lower economic and social status tend to have increased episodic durations of CLBP and poor outcomes for treatment (Hoy, D, et.al 2010 and Rozenberg, S, et.al 2012).

2. Methods

2.1 Subjects

The purpose of this study was to determine the *"Effect of Selected Yoga Asana on Quality of Life of Chronic Low Back Pain Patients."* Total thirty male/female chronic low back pain patients selected as subject (N=30). All the subjects were subjected to six week Yoga training program. These subjects were selected in terms of purposive sample from Haridwar district of Uttarakhand, India. Researcher was explained the objectives and purpose of the research to the subjects and the significance of the study.

2.2 Selection of Variables

Yogic training programs of Twelve weeks' duration will be selected as independent variable of the study. This will include selected asana which are as follows-

Table 1: Selected Yogasana

S. No.	Selected Yogasana
1	Balasana (Child pose)
2	Marjariasana (Cat pose)
3	Bhujangasna (Cobra pose)
4	Dhanurasana (Bow pose)
5	Ushtrasana
6	Paschimottanasana
7	Shavasana – Just lying straight on back is called Shavasana
8	Pawanamuktasana (Wind removing pose)
9	Paschimottanasana

Quality of Life of Chronic Low Back Pain Patients was considered as dependent variable which was measured by The Roland-Morris Disability Questionnaire.

The training was conducted after giving them a good warm up of same duration and of same sequence every time. The yogic training was given two times (one time in morning and one time in evening) in the following way.

- Between 7.00 AM to 8.45 AM
- Between 5.00 PM to 6.45 PM.

2.3 Hypothesis

It was hypothesized that, Yogic training would significantly affect the quality of life of chronic low back Pain patients.

2.4 Collection of data

Data on the selected independent variable was collected by the researcher one day prior to the commencement of training and one day after the completion of training programs. The subject was made relax for pretest.

The post test data was also collected after 48 hours of completion of Six-week Yogic training protocol. The researcher conducted pretest and post-test of Quality of Life of Chronic Low Back Pain Patients (CLBP) to compare the status of patients before and after training.

Yogic intervention program was divided into two phase.

1. Pretest before training;
2. Posttest after 6 week

2.5 Criterion Measures

The criterion measure chosen to test the hypothesis was the scores obtained in Roland-Morris Disability Questionnaire.

2.6 Experimental design:

Pretest-posttest single group Design was used as experimental design in which total 30 male/female Chronic Low Back Pain Patients was given six week yogic training just before pre-test. Data was collected by administration of Roland-Morris Disability Questionnaire for Quality of Life of Chronic Low Back Pain (CLBP) Patients.

2.7 Description of Quality of Life Test

The Roland Morris Disability Questionnaire is a self-reported outcome measure that was first published in 1983. It provides a tool for measuring the level of disability experienced by a person suffering from low back pain. Since then, it has become one of the most widely used outcome measures for low back pain. The Roland Morris Disability Questionnaire consists of 24 statements relating to the person's perceptions of their back pain and associated disability. This includes items on physical ability/activity (15), sleep/rest (3), psychosocial (2), household management (2), eating (1) and pain frequency (1). It is designed to take approximately 5 minutes to complete, without any assistance from the administrator.

2.8 Instructions and scoring: The Roland Morris Disability Questionnaire can be administered face-to-face, electronically or over the phone. The respondent is presented with each statement and asked if they feel the statement is descriptive of their own circumstance on that day. For example, the first statement is 'I stay at home most of the day because of the pain in my back'. If the respondent feels that this statement applies to them they 'tick' the statement, otherwise they leave it blank.

To score the responses, a practitioner need only add up the number of items ticked. There is no weighting applied to the statements, therefore the score can range from 0 (no disability) to 24 (maximal disability). No training is required to administer or score the questionnaire. A slight modification of the scoring method is to have yes/no boxes to be ticked. In this way it is possible to distinguish a missing value from a deliberate 'no' response. If this method is used, the 0 to 24 score should be converted to a percentage score, dropping unanswered questions from the total when more than a single question is left unanswered.

2.9 Administration of Test

The Roland Morris Disability Questionnaire will be distributed to chronic low back patients just before the training. To ensure maximum cooperation from the subjects the research scholar has a meeting with selected subjects. Subjects will be oriented and explained regarding the purpose and the procedure of the questionnaire.

2.10 Scoring of Questionnaire

The Roland Morris Disability Questionnaire consists of 24 statements relating to the person's perceptions of their back pain and associated disability. There is no weighting applied to the statements, therefore the score can range from 0 (no disability) to 24 (maximal disability). In this way it is possible to distinguish a missing value from a deliberate 'no' response. If this method is used, the 0 to 24 score should be converted to a percentage score, dropping unanswered questions from the total when more than a single question is left unanswered.

2.11 Statistical Procedure

In order to find out the Effect of Selected Yoga Asana on Quality of Life of Chronic Low Back Pain Patients, the dependent t-test was employed. The level of significance chosen to test the hypothesis was 0.05, $P < 0.05$.

3. Findings

Findings pertaining to the variable in pre-test and post-test which were subjected to the 't' ratio has been given in Table 2.

Table 2: Significance Difference of Mean of Pre-Test and Post-Test of
Quality Of Life of CLBP Patients

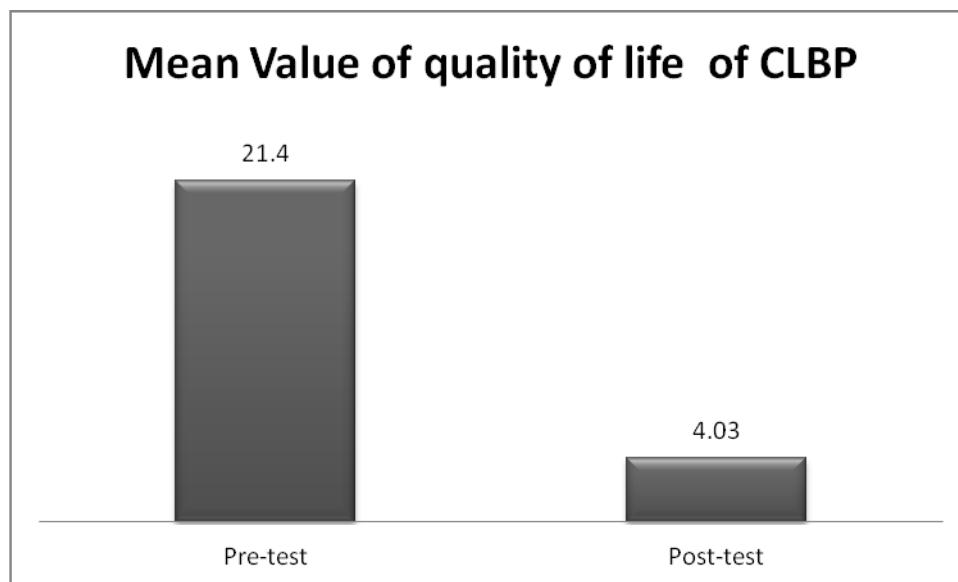
Group	Pre-Test	Post-Test
Mean	21.40	4.03
SD	1.83	2.67
SEM	0.33	0.49
N	30	30
t-ratio	27.98*	

df = 29 ; Standard error of differences – 0.620

Table 2 reveals that mean and standard deviation of pre-test and post-test score with regard to quality of life of CLBP Patients, which were recorded as 21.40 ± 1.83 and 4.03 ± 2.67 respectively, whereas t-value which was calculated as 27.98 ($P=0.0001$), it was

greater than the table value ($t = 2.04$). So the results showed that there has been significant effect of Yogic training on the quality of life of chronic low back Pain patients.

Figure 1: The Pre-Test and Post-Test Mean of Scores of Quality of Life of Chronic Low Back Pain Patients



4. Discussion

Yoga helps increase strength in very specific muscles and muscle groups. Holding positions in yoga is not intended to be uncomfortable. However, it does require concentration and specific use of muscles throughout the body. Muscle strength improves by remaining in these yoga positions and incorporating various movements. Many of the postures in yoga gently strengthen the muscles in the back, as well as the abdominal muscles. Back and abdominal muscles are essential components of the muscular network of the spine, helping the body maintain proper upright posture and movement. When these muscles are well conditioned, back pain can be greatly reduced or avoided. For people with lower back pain, stretching is very important. For example, stretching the hamstring muscles (in the back of the thigh) helps expand the motion in the pelvis, decreasing stress across the lower back. In addition, stretching with yoga, increases strengthening the lower back muscles blood flow, allowing nutrients to flow in, toxins to flow out, and overall nourishment of the muscles and soft tissues in the lower back.

Chronic low back pain (CLBP) is recognized as a major public health problem. The study showed that the practice Yoga provides significant improvement of CLBP in individuals with mild disability.

4.1 Discussion of Hypothesis

In the light of findings of the study, the hypothesis that Yogic training would significantly affect the quality of life of chronic low back patients was accepted.

5. Conclusions

Within the limitations of the study, it is concluded that, the six week Yogic training affect the quality of life of chronic low back patients. Patients showed betterment regarding quality of life and low back pain after six week yogic training.

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